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THIRD ADDENDUM
TO THE
BRITISH PHARMACOPŒIA
1932

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NOTICE

By Section 2 of the Medical Council Act, 1862, the exclusive right of publishing, printing, and selling the British Pharmacopœia is vested in the General Council of Medical Education and Registration of the United Kingdom.

The British Pharmacopœia, 1932, superseded previous issues of the British Pharmacopœia, being for all purposes deemed to be substituted for such previous issues.

The Addendum, 1936, and the Second Addendum, 1940, altered and amended the British Pharmacopœia, 1932, and this Third Addendum effects further alterations and emendations. The General Notices and Appendices included in the British Pharmacopœia, 1932, the Addendum, 1936, and the Second Addendum, 1940, apply to all matter contained in this Addendum, unless the contrary is specifically stated.

This Addendum has the same authority as the British Pharmacopœia, 1932, as amended by the Addendum, 1936, and the Second Addendum, 1940. Monographs of the British Pharmacopœia, 1932, or of these Addenda, which are amended by this Third Addendum, supersede, in their amended forms, the original monographs.

PREFACE

TO THE THIRD ADDENDUM TO THE BRITISH PHARMACOPŒIA, 1932

SECTION 54 of the Medical Act, 1858, provides that the General Council of Medical Education and Registration of the United Kingdom 'shall cause to be published under their direction a Book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit, to be called "The British Pharmacopœia"; and the General Council shall cause to be altered, amended, and republished, such Pharmacopœia as often as they shall deem it necessary.'

This Addendum to the British Pharmacopœia, 1932, has been prepared by the British Pharmacopœia Commission and approved by the Pharmacopœia Committee of the Council in the discharge of the duty entrusted to them by the Standing Orders of the Council to deal with all matters relating to the preparation and publication of the British Pharmacopœia.

The Pharmacopœia Committee of the Council, in a Report made by it to the Council in accordance with the Standing Orders, has conveyed to the Council a cordial expression of its appreciation of the work done by the Commission in preparing this Addendum; and also by the persons and bodies, both in this country and abroad, by whose collaboration that task has been facilitated.

GENERAL MEDICAL COUNCIL OFFICE,
44 HALLAM STREET, PORTLAND PLACE,
LONDON, W.1.

NOTICE CONCERNING PATENTS

In the case of certain substances included in this Addendum, attention is called to the fact that, in so far as these are protected by Letters Patent, it is, or may be, necessary to obtain Licence to manufacture from the Comptroller-General of Patents, Designs and Trade Marks. (See Patents and Designs Acts, 1907 to 1938, and Patents, Designs, Copyright and Trade Marks (Emergency) Act, 1939).

MONOGRAPHS

ALCOHOL TRIBROMOETHYLICUM

[Alcoh. Tribromoethyl.]

Tribromoethyl Alcohol

$CBr_3 \cdot CH_2OH$ . . . Mol. Wt. 282·8

Tribromoethyl Alcohol may be prepared by reduction of tribromoacetaldehyde. It contains not less than 99 per cent. of tribromoethanol, $CBr_3 \cdot CH_2OH$.

Characters. A white crystalline powder, unstable in air; odour and taste, slightly aromatic.

Soluble in about 35 parts of *water* at 25°. Readily soluble in *light petroleum* and in *amylene hydrate.* An aqueous solution is unstable.

Tests for Identity. A dilute aqueous solution, after warming with *solution of sodium hydroxide,* and neutralising, yields the *reactions* characteristic of bromides.

Tests for Purity. *Melting-point,* 79° to 81°.

Dissolve about 0·1 gramme in 5 millilitres of *water* at about 40°, cool, add 1 millilitre of *solution of phenylhydrazine acetate*; no precipitate forms after standing for thirty minutes (limit of dibromoacetaldehyde).

Dissolve 0·1 gramme in 2 millilitres of *nitrogen-free sulphuric acid*; the solution is colourless, or at most faintly brown (limit of readily carbonisable substances).

A 2 per cent. w/v solution in warm *water* at about 40° is not acid to *solution of methyl red.*

To 10 millilitres of a 2 per cent. w/v solution in *water,* prepared at 40° and cooled, add 0·5 millilitre of *solution of silver nitrate*; no immediate opalescence is produced (limit of ionised halogens).

To 10 millilitres of a 2 per cent. w/v aqueous solution add 0·5 millilitre of *solution of barium chloride* and allow to stand for five minutes; no turbidity is produced (limit of sulphates).

To 10 millilitres of a 2 per cent. w/v aqueous solution add 1 drop of *solution of sodium sulphide*; no darkening is produced (limit of heavy metals).

Leaves, on incineration, not more than 0·05 per cent. of residue.

Assay. Dissolve about 0·3 gramme, accurately weighed, in 20 millilitres of *N/1 sodium hydroxide*. Boil for two hours under a reflux condenser. Cool, add 20 millilitres of *dilute nitric acid* and 50 millilitres of *N/10 silver nitrate*, and titrate with *N/10 ammonium thiocyanate*, using *solution of ferric ammonium sulphate* as indicator. Each millilitre of *N/10 silver nitrate* is equivalent to 0·009426 gramme of $CBr_3{\cdot}CH_2OH$.

Storage. Tribromoethyl Alcohol should be kept in a well-closed container, protected from light.

DOSES

Metric.	**Imperial.**
By rectal injection as a basal anæsthetic.	
0·075 to 0·1 gramme per kilogram of body weight.	**1/2 to 2/3 grain per pound of body weight.**

AMYLENI HYDRAS

[Amylen. Hydr.]

Amylene Hydrate

Synonym. Tertiary Amyl Alcohol.

$(CH_3)_2(C_2H_5)C{\cdot}OH$ . . Mol. Wt. 88·09

Amylene Hydrate is dimethylethylcarbinol, and may be prepared by the hydration of amylene.

Characters. A clear, colourless, volatile liquid at ordinary temperatures; at temperatures below − 13° forms hygroscopic acicular crystals; taste, pungent and burning; odour, characteristic, camphoraceous.

Soluble in 8 parts of *water*; miscible with *alcohol (90 per cent.)*, with *ether*, with *chloroform*, and with *glycerin*.

Tests for Identity. Heat 2 millilitres under a reflux condenser for one hour with 15 millilitres of *water*, 5 millilitres of *sulphuric acid* and about 10 grammes of *potassium dichromate*; distil, and collect the first 2 millilitres of distillate; 1 millilitre gives the Test for Identity described under 'Acetonum'. Continue the distillation until most of the water has distilled over, make the distillate alkaline with *solution of sodium hydroxide* and evaporate to dryness; the residue, after neutralisation, if necessary, yields the *reactions* characteristic of acetates.

A 10 per cent. solution in *water* mixed quickly with half its volume of *solution of vanillin in sulphuric acid* yields a violet-red colour.

Tests for Purity. *Specific gravity (15·5°/15·5°)*, 0·814 to 0·817; *boiling-point*, not less than 95 per cent. v/v distils between 100° and 104°.

A 10 per cent. solution in *water* is neutral to *solution of litmus*.

To 1 millilitre add 20 millilitres of *water* and 0·25 millilitre of *N/10 potassium permanganate*; the pink colour does not entirely disappear within ten minutes (limit of other amyl alcohols, amylene and other organic impurities).

To 1 millilitre add 20 millilitres of *water* and 1 millilitre of *solution of silver ammonio-nitrate*, and heat in a water bath at 60° for ten minutes; no darkening occurs (absence of aldehyde).

Mix 10 millilitres with 10 millilitres of *light petroleum (boiling-point, 50° to 60°)*; no cloudiness is produced (limit of water).

Leaves, on evaporation and drying at 100°, not more than 0·01 per cent. w/v of residue (limit of non-volatile matter).

DOSES

Metric.	Imperial.
2 to 4 mils.	30 to 60 minims.

ANEURINÆ HYDROCHLORIDUM

[Aneurin. Hydrochlor.]

Aneurine Hydrochloride

Synonyms. Aneurine Chloride Hydrochloride: Vitamin B_1 Thiamine Hydrochloride.

$C(NH_2){:}N{\cdot}C(CH_3){:}N{\cdot}CH{:}C{\cdot}CH_2{\cdot}NCl{:}CH{\cdot}S{\cdot}C(CH_2{\cdot}CH_2OH){:}C(CH_3), HCl, H_2O$

Mol. Wt. 355·2.

Aneurine Hydrochloride is 3-(4′-amino-2′-methylpyrimidyl-5′-methyl)-4-methyl-5-β-hydroxyethylthiazolium chloride hydrochloride. It may be obtained from rice polishings, yeast and other natural sources, or by synthesis. It contains not less than 20·5 per cent. and not more than 21·1 per cent. of total Cl, and not less than 10·4 per cent. and not more than 10·7 per cent. of Cl present as hydrochloride, both calculated with reference to the substance dried at 105°.

Characters. Colourless monoclinic plates, usually in rosette-like clusters; odour and taste, faint and bran-like.

Readily soluble in *water*; less soluble in *methyl alcohol*; almost insoluble in *dehydrated alcohol*, in *ether* and in *acetone*.

Tests for Identity. *Melting-point*, after drying at 105° for thirty minutes, 245° to 250°, with decomposition.

To a solution of 0·02 milligram in 0·3 millilitre of a mixture of 7 volumes of *N/1000 hydrochloric acid* and 3 volumes of *alcohol* (*90 per cent.*), add 1 drop of *solution of formaldehyde*, followed immediately by a solution prepared by adding 1·25 millilitres of a mixture of equal volumes of *N/1 sodium hydroxide* and a 5·76 per cent. w/v solution of *sodium bicarbonate* in *water* to 0·5 millilitre of *solution of diazobenzenesulphonic acid*; set aside; a pink colour is slowly developed; add 2 millilitres of *butyl alcohol* and shake; the alcoholic layer is pink.

Dissolve about 0·01 gramme in 10 millilitres of *2N sodium hydroxide*, add 10 millilitres of *solution of potassium ferricyanide* and 5 millilitres of *butyl alcohol*, shake for two minutes and allow to separate; the alcoholic layer shows an intense blue fluorescence which disappears on acidification and reappears on making alkaline.

Dissolve 0·05 gramme in 5 millilitres of *water*, add 10 millilitres of a saturated solution of *trinitrophenol* in *water*, manipulate the precipitate gently with a glass rod and set aside for twenty minutes, collect the precipitate, dry on porous earthenware and then at 105° for thirty minutes; *melting-point* of the dried material, 206° to 208°, with darkening and decomposition, after sintering at 200°.

Tests for Purity. *Ultra-violet absorption* at 247 mμ in *N/200 hydrochloric acid*, 425 to 450.

Reaction of a 5 per cent. w/v solution in *water*, *pH* 3·4 to 3·6.

0·2 gramme loses, when dried at 105°, not more than 0·01 gramme; and leaves, on incineration, not more than 0·0002 gramme of residue.

Assay. *For total chlorine.* Dissolve about 0·1 gramme, accurately weighed, in 20 millilitres of *water*, acidify with *dilute nitric acid* and add 10 millilitres of *N/10 silver nitrate.* Filter, wash the precipitate with *water*, and titrate the filtrate and washings with *N/10 ammonium thiocyanate*, using *solution of ferric ammonium sulphate* as indicator. Each millilitre of *N/10 silver nitrate* is equivalent to 0·003546 gramme of Cl.

For chlorine present as hydrochloride. Dissolve about 0·1 gramme, accurately weighed, in 20 millilitres of water, and titrate with *N/10 sodium hydroxide*, adding *solution of phenolphthalein* and taking the first development of colour to indicate the end of the titration. Each millilitre of *N/10 sodium hydroxide* is equivalent to 0·003546 gramme of Cl.

Storage. Crystalline Aneurine Hydrochloride is stable, when kept in a glass bottle, protected from light. Solutions of Aneurine Hydrochloride are stable if faintly acid (*p*H 6 to 6·5). Neutral and alkaline solutions deteriorate rapidly, especially in contact with air.

DOSES

Metric.	Imperial.
Prophylactic (daily).	
0·0003 to 0·0006 gramme.	$^1/_{200}$ to $^1/_{100}$ grain.
(100 to 200 Units.)	
Therapeutic (daily).	
0·0006 to 0·0018 gramme.	$^1/_{100}$ to $^1/_{33}$ grain.
(200 to 600 Units.)	

Aneurine Hydrochloride possesses antineuritic properties and, if tested by the *biological assay of antineuritic vitamin* (*vitamin B_1*), contains in 1 gramme 320,000 *Units of antineuritic activity* (*vitamin B_1*).

The antineuritic activity of a preparation containing vitamin B_1, for which the chemical assay is not applicable, is determined in relation to the Standard Preparation of antineuritic vitamin (vitamin B_1) by the *biological assay of antineuritic vitamin* (*vitamin B_1*), and is expressed in Units per gramme.

NOTE.—See Notice Concerning Patents, page viii.

ATROPINÆ SULPHAS

[Atrop. Sulph.]

Atropine Sulphate

British Pharmacopœia, 1932, page 76, lines 6 to 9.

Tests for Purity. The statement of *Melting-point* is changed to: "*Melting-point*, of the substance which has been powdered, and dried at 135° for exactly ten minutes, not below 188°."

The statement of *optical rotation* is deleted.

BROMETHOL

[Bromethol.]

Bromethol

Synonym. Solution of Tribromoethyl Alcohol.

Tribromoethyl Alcohol . .	66·7 grammes
Amylene Hydrate . . .	33·3 grammes

Dissolve the Tribromoethyl Alcohol in the Amylene Hydrate.

Storage. Bromethol should be kept in a dry well-closed container, and protected from light. Bromethol is rapidly decomposed by moisture.

Preparation of a Solution for Rectal Injection. For use by rectal injection, Bromethol is diluted immediately before administration with 39 times its own volume of Distilled Water at 40°, solution being effected by vigorous agitation. The diluted solution is tested before administration by adding 0·2 millilitre of *solution of congo red* to 5 millilitres of the diluted solution, when the colour of the indicator should remain orange; if it changes to purple or blue, the diluted solution is rejected.

DOSES

Metric.	**Imperial.**
By rectal injection as a basal anæsthetic.	
0·075 to 0·1 mil per kilogram of body weight.	**$^1/_2$ to $^2/_3$ minim per pound of body weight.**

Bromethol contains, in 1 millilitre, 1 gramme of Tribromoethyl Alcohol.

NOTE.—See Notice Concerning Patents, page viii.

CARBACHOLUM

[Carbachol.]

Carbachol

$NH_2{\cdot}CO_2{\cdot}CH_2{\cdot}CH_2{\cdot}N(CH_3)_3Cl$. Mol. Wt. 182·6

Carbachol is carbamylcholine chloride and may be obtained by the interaction of β-chloroethyl carbamate and trimethylamine. It contains not less than 99·5 per cent. of $C_6H_{15}O_2N_2Cl$, calculated with reference to the substance dried at 110°.

Characters. Small, colourless, hard prismatic crystals, or a crystalline powder; odour, faint, resembling that of an aliphatic amine; markedly hygroscopic in moist air.

Very soluble in *water*; very slightly soluble in *dehydrated alcohol* at 20°, but dissolves more readily on boiling, and separates on cooling, in transparent, highly refractive prisms. Almost insoluble in *acetone* and in *ether*.

Tests for Identity. An aqueous solution is neutral to *solution of litmus*.

To a 1 per cent. w/v solution in *water* add *solution of potassio-mercuric iodide*; a cream-coloured precipitate is produced.

Boil about 0·2 gramme with 3 millilitres of *solution of sodium hydroxide*; ammonia is first evolved, and as the liquid becomes concentrated on further heating, trimethylamine, recognisable by its odour, is evolved.

To a 10 per cent. w/v solution in *water* add a small excess of a 10 per cent. w/v solution of *auric chloride* in *water*; an aurichloride at once separates in small yellow crystals. Collect the precipitate and recrystallise from hot *water*; carbamylcholine aurichloride, $C_6H_{15}O_2N_2,AuCl_4$, separates in shimmering, thin, flat prismatic crystals, which, after drying at 100°, have the *melting-point* 183° to 184°.

An aqueous solution yields the *reactions* characteristic of chlorides.

Tests for Purity. *Melting-point,* 210° to 212°, with decomposition.

0·2 gramme loses, when dried at 110°, not more than 0·001 gramme, and leaves on incineration not more than 0·0002 gramme of residue.

Assay. Dissolve about 0·5 gramme, accurately weighed, in 25 millilitres of *water*, and titrate with *N/10 silver nitrate*, using *solution of potassium chromate* as indicator. Each millilitre of *N/10 silver nitrate* is equivalent to 0·01826 gramme of $C_6H_{15}O_2N_2Cl$.

Storage. Carbachol should be kept in a well-closed container.

Sterilisation of a Solution. A solution of Carbachol for injection is sterilised by *heating in an autoclave* or by *filtration*.

DOSES

Metric.	**Imperial.**
0·001 to 0·004 gramme.	**$^1/_{64}$ to $^1/_{16}$ grain.**
By subcutaneous injection.	
0·00025 to 0·0005 gramme.	**$^1/_{240}$ to $^1/_{120}$ grain.**

NOTE.—See Notice Concerning Patents, page viii.

CHLOROCRESOL

[Chlorocresol]

Chlorocresol

Synonym. *Para*chloro*meta*cresol.

$CH_3 \cdot C_6H_3(Cl) \cdot OH$ [$CH_3 : Cl : OH = 1 : 6 : 3$]

Mol. Wt. 142·58

Chlorocresol is 6-chloro-3-hydroxytoluene and may be prepared by the chlorination of *m*-cresol.

Characters. Colourless crystals; odour, characteristic.

Soluble in 250 parts of *water*; more soluble in hot *water*; readily soluble in *alcohol*, in *ether*, in terpenes, in fixed oils, and in *solution of sodium hydroxide*. Volatile in steam.

Tests for Identity. To a saturated aqueous solution add 1 drop of *test-solution of ferric chloride*; a bluish colour is produced.

Mix 0·05 gramme with 0·5 gramme of *anhydrous sodium carbonate* and ignite strongly; cool, boil the residue with 5 millilitres of *water*, acidify with *nitric acid*, filter and add *solution of silver nitrate*; a white precipitate is produced.

Tests for Purity. *Melting-point*, 64° to 66°.

Leaves, when volatilised on a water-bath, not more than 0·1 per cent. of residue.

EMPLASTRUM PLUMBI

[Emp. Plumb.]

Plaster of Lead

Synonyms. Lead Plaster: Diachylon Plaster: Diachylon.

Arachis Oil may be used, in place of Olive Oil, in making this Plaster.

HEXOBARBITONUM

[Hexobarbiton.]

Hexobarbitone

Synonym. Hexobarbital.

$(CH_3)(C_6H_9)C{\cdot}CO{\cdot}N{\cdot}(CH_3){\cdot}CO{\cdot}NH{\cdot}CO$. Mol. Wt. 236·1

Hexobarbitone is 5-Δ^1-*cyclo*hexenyl-5-methyl-N-methylbarbituric acid, and may be obtained by the condensation of methyl Δ^1-*cyclo*hexenylmethylcyanoacetate with methyl urea, followed by hydrolysis of the product.

Characters. Colourless, prismatic crystals; odourless and tasteless.

Soluble in about 3000 parts of *water* at 20°; soluble in *dehydrated alcohol*, in *methyl alcohol*, in *acetone*, in *benzene*, in *chloroform* and in *ether*. Soluble in aqueous solutions of the alkali hydroxides, but not in solutions of the alkali carbonates.

Tests for Identity. A saturated aqueous solution is neutral to *methyl red*.

Triturate 0·59 gramme with 5 millilitres of *water* and 0·13 gramme of *anhydrous sodium carbonate*; add 0·43 gramme of *nitrobenzyl chloride*, dissolved in 10 millilitres of *alcohol (95 per* *cent.*) and warm the mixture on a water-bath for thirty minutes. Cool, allow to stand for one hour. Collect the precipitated nitrobenzyl derivative on a filter, wash with 10 millilitres of *N/1 sodium hydroxide*, then with *water*, drain on porous porcelain, and recrystallise from *light petroleum* ; the crystals have the *melting-point*, 116° to 117°.

Tests for Purity. *Melting-point*, 145° to 147°.

Dissolve 1 gramme in a mixture of 2 millilitres of *solution of sodium hydroxide* and 3 millilitres of *water*, extract with 25 millilitres of *ether* and wash the ethereal solution with three separate quantities of 5 millilitres of *water* ; remove the ether and dry the residue at 100° ; the residue weighs not more than 0·001 gramme (limit of neutral and basic substances).

Leaves, on incineration, not more than 0·05 per cent. of residue.

DOSES

Metric.	**Imperial.**
0·25 to 0·5 gramme.	**4 to 8 grains.**

NOTE.—See Notice Concerning Patents, page viii.

HEXOBARBITONUM SOLUBILE

[Hexobarbiton. Solub.]

Soluble Hexobarbitone

Synonym. Soluble Hexobarbital.

$(CH_3)(C_6H_9)C{\cdot}CO{\cdot}N(CH_3){\cdot}CO{\cdot}NNa{\cdot}CO$. Mol. Wt. 258·1

Soluble Hexobarbitone is the mono-sodium derivative of 5-Δ^1-*cyclo*hexenyl-5-methyl-N-methylbarbituric acid, and may be obtained by the interaction of this substance and sodium hydroxide. It contains not less than 96 per cent. of $C_{12}H_{15}O_3N_2Na$; the percentage of sodium is not less than 8·86 per cent. and not more than 9·0 per cent. of the $C_{12}H_{15}O_3N_2Na$.

Characters. A white, very hygroscopic powder; odourless; taste, bitter.

Very soluble in *water*, in *alcohol*, in *methyl alcohol* and in *acetone*. Only slightly soluble in *chloroform* and in *ether* ; insoluble in *benzene*. An aqueous solution absorbs carbon dioxide, causing separation of hexobarbitone in crystals.

Tests for Identity. A 10 per cent. w/v solution in *water* is strongly alkaline, having *p*H about 10·5.

To a 10 per cent. w/v solution in *water* add an excess of *dilute hydrochloric acid*; collect the crystalline precipitate on a filter, wash with *water* and dry at 100°; the crystals have the *melting-point* 143° to 147°, and comply with the Tests for Identity described under 'Hexobarbitonum'. Evaporate the filtrate to dryness, the residue yields the *reactions* characteristic of sodium.

Tests for Purity. Dissolve 1 gramme in 10 millilitres of freshly-boiled and cooled *water*; it dissolves rapidly and completely, giving a clear, colourless solution which does not show any opalescence after one hour.

Dissolve 1 gramme in 5 millilitres of *methyl alcohol*; the solution is clear, or only faintly turbid (absence of sodium carbonate).

Dissolve 1 gramme in a mixture of 2 millilitres of *solution of sodium hydroxide* and 3 millilitres of *water*, extract with 25 millilitres of *ether* and wash the ethereal solution with three separate quantities of 5 millilitres of *water*; remove the ether and dry the residue at 100°; the residue weighs not more than 0·001 gramme (limit of neutral and basic substances).

Assay. *For sodium.* Dissolve about 0·6 gramme, accurately weighed, in 20 millilitres of *water*, add 1 drop of *solution of methyl red* and titrate with *N/10 sulphuric acid* until the yellow colour changes to pink; boil gently for one or two minutes, cool, and if necessary continue the titration with *N/10 sulphuric acid* until the pink colour is restored. Each millilitre of *N/10 sulphuric acid* is equivalent to 0·0023 gramme of Na.

For $C_{12}H_{15}O_3N_2Na$. To the liquid from the Assay for sodium add a further 5 millilitres of *N/10 sulphuric acid*, and 25 millilitres of *chloroform*; shake vigorously. Separate the chloroform extract and wash it with 15 millilitres of *water*. Repeat the extraction of the acid liquid with two further quantities of 15 millilitres of *chloroform*, and wash each extract with the water used for the first extraction. Remove the chloroform from the mixed chloroform extracts, add 5 millilitres of *dehydrated alcohol*, evaporate to dryness, and dry the crystalline residue at 100°. 1 gramme of residue is equivalent to 1·093 gramme of $C_{12}H_{15}O_3N_2Na$.

Sterilisation of a Solution. Soluble Hexobarbitone is prepared in solution for injection by dissolving it in the requisite amount of Sterilised Water.

Storage. Soluble Hexobarbitone should be kept in a well-closed glass container, preferably sealed by fusion.

DOSES

Metric.	Imperial.
By intravenous or intramuscular injection.	
0·2 to 1 gramme.	**3 to 15 grains.**
By rectal injection.	
2 to 4 grammes.	**30 to 60 grains.**

INJECTIO BISMUTHI SALICYLATIS

[Inj. Bism. Salicyl.]

Injection of Bismuth Salicylate

Arachis Oil may be used, in place of Olive Oil, in making this Injection.

INJECTIO HYDRARGYRI

[Inj. Hydrarg.]

Injection of Mercury

Synonym. Mercurial Cream.

Arachis Oil may be used, in place of Olive Oil, in making this Injection.

INJECTIO HYDRARGYRI SUBCHLORIDI

[Inj. Hydrarg. Subchlor.]

Injection of Mercurous Chloride

Synonym. Calomel Injection.

Arachis Oil may be used, in place of Olive Oil, in making this Injection.

INJECTIO LEPTAZOLI

[Inj. Leptazol.]

Injection of Leptazol

Leptazol	10	grammes
Sodium Phosphate	0·25	gramme
Distilled Water, sufficient to produce	100	millilitres

Dissolve ; adjust the *reaction* to *p*H 7·8 by the addition of Dilute Hydrochloric Acid or a solution of Sodium Hydroxide ; filter in glass apparatus ; sterilise by *heating in an autoclave*, or by *filtration*.

Test for Purity. *Reaction*, *p*H 7·6 to 8·0.

DOSES

By subcutaneous injection.

Metric.	**Imperial.**
0·5 to 1 mil.	**8 to 15 minims.**

By intravenous injection as a convulsant.

Metric.	**Imperial.**
2 to 5 mils increasing to 12 mils.	**30 to 75 minims increasing to 180 minims.**

The general instruction, to add an antiseptic to a solution of a drug for injection if it is to be dispensed in a container which is sealed so as to permit the withdrawal of successive doses on different occasions (British Pharmacopœia, 1932, page 630), does not apply to Injection of Leptazol.

IODOXYLUM

[Iodoxyl.]

Iodoxyl

$CH_3N\cdot C(COONa):CI\cdot CO\cdot CI:C(COONa)$. Mol. Wt. 493

Iodoxyl is the disodium salt of N-methyl–3:5–diiodo–4–pyridone–2:6–dicarboxylic acid. It may be prepared by the methylation of diiodochelidamic acid and subsequent conversion into the disodium salt. It contains not less than 50·5 per cent. and not more than 52·5 per cent. of I, and not less than 9·2 per cent. and not more than 9·4 per cent. of Na, both calculated with reference to the substance dried in a vacuum desiccator.

Characters. A white powder; odourless.

Soluble in 1·2 parts of *water*, and in 100 parts of *alcohol* (*90 per cent.*); insoluble in *ether* and in *chloroform*.

Tests for Identity. Dissolve about 0·5 gramme in 10 millilitres of *water*, acidify with 2 millilitres of *hydrochloric acid*; filter off the liberated acid, wash with a little *water*, and dry at 100°; *melting-point* of the free acid, about 174°, with decomposition.

Heat about 0·01 gramme with a few drops of *sulphuric acid* in a porcelain crucible; violet vapours are evolved.

Tests for Purity. Dissolve 0·5 gramme in 10 millilitres of *water*, and add 2 drops of *solution of sodium sulphide*; no colour is produced (limit of heavy metals).

A solution of 1 gramme in 2 millilitres of *water* shows not more than the faintest pink colour.

Dissolve 0·25 gramme in 50 millilitres of *water*; add 1 millilitre of *dilute hydrochloric acid* and 1 millilitre of freshly prepared *solution of ferric ammonium sulphate*; the colour (compared immediately) is not greater than that produced when 1·0 millilitre of a 0·01 per cent. w/v freshly prepared solution of *salicylic acid* in *water* is diluted with *water* to 50 millilitres, and 1 drop of *solution of ferric ammonium sulphate* is added (limit of diiodochelidamic acid).

Arsenic limit, 1 part per million.

Loses, when dried in a vacuum desiccator, not more than 1 per cent. of its weight.

Assay. *For iodine.* Carry out the Assay as directed under 'Thyroxinsodium', using about 0·1 gramme, accurately weighed.

For sodium. Moisten about 0·3 gramme, accurately weighed, with *sulphuric acid*, ignite gently and weigh. Repeat the addition of *sulphuric acid* and ignition until the weight is constant. 1 gramme of the residue is equivalent to 0·3238 gramme of Na.

Sterilisation of a Solution. A solution of Iodoxyl for injection is sterilised by *filtration*.

DOSES

By intravenous injection.

Metric.	Imperial.
10 to 15 grammes.	150 to 225 grains.

NOTE.—See Notice Concerning Patents, page viii.

IPECACUANHA

[Ipecac.]

Ipecacuanha

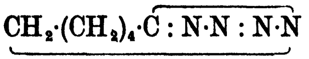
Synonyms. Ipecacuanhæ Radix: Ipecacuanha Root.

British Pharmacopœia, 1932, page 237, line 4, "two-thirds" is changed to "three-fifths", so that the standard for alkaloidal content is amended to read:—"Not less than 2 per cent. of the total alkaloids of Ipecacuanha, calculated as emetine, of which not less than three-fifths consists of non-phenolic alkaloids, calculated as emetine."

LEPTAZOLUM

[Leptazol.]

Leptazol



$\underline{CH_2\cdot(CH_2)_4\cdot\overline{C:N\cdot N:N\cdot N}}$. Mol. Wt. 138·1

Leptazol is pentamethylenetetrazole, and may be prepared

by the interaction, in cold benzene solution, of hydrazoic acid and cyclohexanone.

Characters. Colourless crystals, or a white crystalline powder; odourless; taste, slightly pungent, bitter.

Readily soluble in *water*, in *alcohol* (*95 per cent.*), in *ether* and in *chloroform*.

Test for Identity. A 10 per cent. w/v solution in *water* yields with *test solution of mercuric chloride* a white precipitate, which, after recrystallisation from *water* or *alcohol* (*95 per cent.*), melts at 177° to 178°.

Tests for Purity. *Melting-point*, 57° to 60°.

A 10 per cent. w/v solution in *water* is neutral to *solution of litmus*.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Preparation. Injectio Leptazoli.

DOSES

Metric.	Imperial.
0·05 to 0·1 gramme.	$^3/_4$ to $1^1/_2$ grains.

NOTE.—See Notice Concerning Patents, page viii.

MEPACRINÆ HYDROCHLORIDUM

[Mepacr. Hydrochlor.]

Mepacrine Hydrochloride

$C_{23}H_{30}ON_3Cl, 2HCl,2H_2O$. Mol. Wt. 508·7

Mepacrine Hydrochloride is the dihydrochloride of 2-chloro-5-[ω-diethylamino-α-methylbutylamino]-7-methoxyacridine, and may be prepared by the condensation of ω-diethylamino-α-methylbutylamine with 2 : 5 dichloro-7-methoxyacridine and converting the base into the dihydrochloride. It contains not less than 98·5 per cent., and not more than the equivalent of 101·5 per cent., of $C_{23}H_{30}ON_3Cl,2HCl,2H_2O$.

Characters. A bright yellow, crystalline powder; odourless; taste, bitter.

Soluble in about 30 parts of *water*, giving a clear yellow solution.

Tests for Identity. Dissolve 0·5 gramme in 20 millilitres of *water* and use the solution for the following tests:—

To 5 millilitres add *dilute solution of ammonia* in slight excess; a yellow to orange-coloured pasty precipitate is formed which adheres to the side of the tube and is readily soluble in *ether*.

To 5 millilitres add 1 millilitre of *dilute nitric acid*; a yellow crystalline precipitate is formed.

To 5 millilitres add 1 millilitre of *test-solution of mercuric chloride*; a yellow precipitate is formed.

To the remainder of the solution add a slight excess of *dilute solution of ammonia*, shake vigorously and filter; the filtrate gives the *reactions* characteristic of chlorides.

Tests for Purity. An aqueous solution is neutral to *solution of litmus*.

Shake 0·5 gramme, finely powdered, in a stoppered flask with 20 millilitres of *anæsthetic ether* for one hour, and filter. The filtrate should show no greater fluorescence than that exhibited by a solution of 1·25 milligrams of *chloromethoxyacridone* in 100 millilitres of *anæsthetic ether* (limit of 2-chloro-7-methoxyacridone).

Loses, when dried over sulphuric acid in a vacuum desiccator, not less than 6 per cent., and not more than 8 per cent., of its weight.

Assay. Dissolve 0·4 gramme in 45 millilitres of *water*, add 0·5 gramme of *anhydrous sodium acetate*, heat to 50° to 60°, add 5 millilitres of *solution of ammonium thiocyanate* and shake until the precipitate becomes crystalline. Allow to stand overnight. Filter on a tared sintered glass filter, wash the precipitate with two successive portions of 2 millilitres of a saturated solution of *mepacrine thiocyanate* in *water*, and dry at 100° to constant weight. 1·0 gramme of the precipitate is equivalent to 0·9822 gramme of $C_{23}H_{30}ON_3Cl, 2HCl, 2H_2O$.

DOSES

Metric.	Imperial.
0·05 to 0·1 gramme.	$^3/_4$ to $1^1/_2$ grains.

NOTE.—See Notice Concerning Patents, page viii.

MEPACRINÆ METHANOSULPHONAS

[Mepacr. Methanosulph.]

Mepacrine Methanesulphonate

$C_{23}H_{30}ON_3Cl, 2CH_3SO_3H$. Mol. Wt. 591·9

Mepacrine methanesulphonate is 2-chloro-5-[ω-diethylamino-α-methylbutylamino]-7-methoxyacridine dimethanesulphonate and may be prepared by treating mepacrine in alcoholic solution with methanesulphonic acid and precipitating the methanesulphonate with ether. It contains not less than 99·2 per cent. of $C_{23}H_{30}ON_3Cl, 2CH_3SO_3H$.

Characters. A bright yellow, crystalline solid; odourless; taste, bitter.

Soluble in 3 parts of *water* and in 36 parts of *alcohol (95 per cent.)*.

Tests for Identity. Dissolve 0·5 gramme in 20 millilitres of *water* and use the solution for the following tests:—

To 5 millilitres add *dilute solution of ammonia* in slight excess; a yellow to orange coloured pasty precipitate is formed which adheres to the side of the tube and is readily soluble in *ether*.

To 5 millilitres add 1 millilitre of *dilute nitric acid*; a yellow, crystalline precipitate is formed.

To 5 millilitres add 1 millilitre of *test-solution of mercuric chloride*; a yellow precipitate is formed.

The remainder of the solution gives no *reaction* characteristic of sulphates.

Fuse 0·1 gramme with *anhydrous sodium carbonate*, extract with *water* and filter; the filtrate gives the *reactions* characteristic of sulphates.

Tests for Purity. An aqueous solution is neutral to *solution of litmus*.

Shake 0·5 gramme, finely powdered, in a stoppered flask with 20 millilitres of *anæsthetic ether*, for one hour and filter; the filtrate shows no fluorescence.

Loses, when dried over sulphuric acid in a vacuum desiccator, not more than 1 per cent. of its weight.

Assay. Dissolve 0·4 gramme in 45 millilitres of *water*, add 0·5 gramme of *anhydrous sodium acetate*, heat to 50° to 60°, add 5 millilitres of *solution of ammonium thiocyanate* and shake until the precipitate becomes crystalline. Allow to stand overnight. Filter on a tared sintered glass filter, wash the precipitate with two successive portions of 2 millilitres of a saturated solution of *mepacrine thiocyanate* in *water* and dry at 100° to constant weight. 1·0 gramme of the precipitate is equivalent to 1·143 gramme of $C_{23}H_{30}ON_3Cl, 2CH_3SO_3H$.

DOSES

Metric.	Imperial.
By intramuscular injection.	
0·05 to 0·1 gramme.	**$^3/_4$ to $1^1/_2$ grains.**

Note.—See Notice Concerning Patents, page viii.

NIKETHAMIDUM

[Nikethamid.]

Nikethamide

$\overline{\mathrm{CH{:}CH{\cdot}CH{:}N{\cdot}CH{:}C}}\mathrm{{\cdot}CON(C_2H_5)_2}$ . . Mol. Wt. 178·1

Nikethamide is the diethylamide of pyridine-β-carboxylic acid, and may be prepared by the action of thionyl chloride on nicotinic acid, and treatment of the resulting acid chloride with diethylamine. It contains not less than 98 per cent. of $C_{10}H_{14}ON_2$.

Characters. A colourless or yellowish oily liquid, or crystalline solid; almost odourless; taste, faintly bitter, followed by a faint sensation of warmth.

Miscible in all proportions with *water*; readily soluble in *alcohol (90 per cent.)*, in *ether*, in *chloroform* and in *acetone*.

Tests for Identity. A 25 per cent. w/v solution in *water* gives a voluminous precipitate with *alkaline solution of potassio-mercuric iodide* and with *solution of mercuric chloride*; with *solution of tannic acid* it gives a greyish-brown flocculent precipitate. The solution gives no precipitate with *solution of iodine*, with *solution of trinitrophenol* or with *solution of potassio-mercuric iodide*.

Saturate a 25 per cent. w/v solution in *water* with *sodium carbonate*; an oily layer is formed below the aqueous layer.

Freezing-point, 22° to 24°.

Tests for Purity. *Specific gravity (15·5°/15·5°)*, 1·064 to 1·067; *refractive index* at 20°, 1·525 to 1·526.

Mix 5 millilitres of a 25 per cent. w/v solution in *water* with 3 drops of 0·1 per cent. w/v solution of *potassium permanganate* in *water*; the pink colour is not discharged within two minutes.

Assay. Heat about 0·4 gramme, accurately weighed, in a long-necked flask with 10 millilitres of 50 per cent. v/v *nitrogen-free sulphuric acid* for two hours, cool, dilute with *water*, transfer to an ammonia distillation apparatus, add 50 millilitres of *solution of sodium hydroxide* and distil the liberated diethylamine into 25 millilitres of *N/10 hydrochloric acid*. Titrate the excess of acid with *N/10 sodium hydroxide*, using *solution of methyl red* as indicator. Repeat the experiment without the pyridine-β-carboxylic acid diethylamide. The difference between the two titrations represents the acid required to neutralise the diethylamine formed. Each millilitre of *N/10 hydrochloric acid* is equivalent to 0·01781 gramme of $C_{10}H_{14}ON_2$.

Sterilisation of a Solution. A solution of Nikethamide for injection is sterilised by ***heating in an autoclave***, or by ***filtration***.

DOSES

Metric.	**Imperial.**
0·2 to 0·5 gramme.	**8 to 8 grains.**
By intravenous injection as a stimulant.	
0·5 to 1·25 gramme.	**8 to 20 grains.**

PASTA ACIDI TANNICI

[Past. Acid. Tann.]

Paste of Tannic Acid

Synonym. Tannic Acid Jelly.

Tannic Acid	50 grammes
Tragacanth, finely powdered .	20 grammes
Chlorocresol	1 gramme
Alcohol (95 per cent.) . .	60 millilitres
Distilled Water, sufficient to produce	1000 millilitres

Dissolve the Chlorocresol in 900 millilitres of the Distilled Water by the aid of heat, cool, add the Tannic Acid, shake until dissolved and filter. Mix the Tragacanth with the Alcohol (95 per cent.) in a dry bottle, add, as quickly as possible, the solution of Chlorocresol and Tannic Acid, shake vigorously and add a sufficient quantity of the Distilled Water to produce the required volume.

In making Paste of Tannic Acid, the Alcohol (95 per cent.) may be replaced by Industrial Methylated Spirit, diluted so as to be of equivalent alcoholic strength, provided that the law and the statutory regulations governing the use of Industrial Methylated Spirit are observed.

PHEMITONUM

[Phemiton.]

Phemitone

$(C_2H_5)(C_6H_5)\overline{C\cdot CO\cdot N(CH_3)\cdot CO\cdot NH\cdot CO}$. Mol. Wt. 246·1

Phemitone is N-methyl-5-phenyl-5-ethylbarbituric acid and may be obtained by condensing diethyl phenylethylmalonate with methyl urea.

Characters. A white crystalline powder; odourless; tasteless.

Almost insoluble in *water*; soluble in *alcohol* (*90 per cent.*) in *ether*, in *chloroform* and in aqueous solutions of alkali hydroxides.

Test for Identity. When boiled with a strong solution of *sodium hydroxide* it evolves ammonia and methylamine.

Tests for Purity. *Melting-point*, 178° to 181°.

Dissolve 0·1 gramme in 2 millilitres of *sulphuric acid*; not more than a faint yellow or straw colour is produced (limit of readily carbonisable substances).

Dissolve 1 gramme in 2 millilitres of *solution of sodium hydroxide* and 13 millilitres of *water*, extract with *ether*, and evaporate; the residue weighs not more than 0·0025 gramme (limit of neutral and basic substances).

DOSES

Metric.	Imperial.
0·03 to 0·4 gramme.	$^1/_2$ to 6 grains.

NOTE.—See Notice Concerning Patents, page viii.

SAPO DURUS

[Sap. Dur.]

Hard Soap

Hard Soap is soap made by the interaction of sodium hydroxide with a suitable vegetable oil or oils, or with fatty acids derived therefrom; the use of coconut oil or palm kernel oil or of fatty acids derived from them is not admitted.

Characters. A greyish-white or yellowish-white substance; nearly odourless. Becomes horny and pulverisable when dried.

Soluble in *water*; almost completely soluble in *alcohol* (*90 per cent.*) and more readily soluble when warmed.

Tests for Purity. Complies with the tests for limit of alkali hydroxide, limit of free fatty acid, and limit of total free alkali described under ‘ Sapo Mollis ’, the tests being carried out on the material which has been reduced to thin shavings, or to powder.

Carry out the test for limit of unsaponified neutral fat and unsaponifiable matter described under ‘ Sapo Mollis ’, on the material which has been reduced to thin shavings, or to powder; the weight of the residue is not more than 0·05 gramme.

Carry out the test for limit of chloride and other alcohol-insoluble substances described under 'Sapo Mollis'; the weight of the residue is not more than 0·05 gramme.

Complies with the test for absence of resin described under 'Sapo Mollis'.

Dissolve about 20 grammes in hot *water*, add a slight excess of *dilute sulphuric acid*, and heat on a water-bath, until the liberated fatty acids form a transparent layer. Separate the fatty acids on a wet filter paper, and wash with hot *water*, until the washings are neutral to *solution of methyl orange*. Filter the oily layer through a dry filter-paper in a warm oven; the fatty acids have the following characters:—*solidifying-point*, not less than 28° (unless the soap is made entirely from olive oil), *acid value*, determined on 2 to 3 grammes of the fatty acids, using *N/2 aqueous potassium hydroxide* and multiplying the number of millilitres required by 5, not greater than 205.

Loses, when dried at 100°, not less than 20 per cent., and not more than 30 per cent., of its weight.

Hard Soap in powder complies with the Tests for Purity prescribed for Hard Soap with the following modifications:—

Limit of alkali hydroxide—not more than 1·3 millilitres of *N/10 hydrochloric acid* is required.

Limit of free fatty acid—not more than 0·25 millilitre of *N/10 sodium hydroxide* is required.

Limit of total free alkali—the volume of *N/1 sulphuric acid* neutralised by the soap is not more than 1·3 millilitres.

Limit of unsaponified neutral fat and unsaponifiable matter—the weight of the residue is not more than 0·07 gramme.

Limit of chloride and other alcohol-insoluble substances—the weight of the residue is not more than 0·07 gramme.

Loses, when dried at 110°, not more than 5 per cent. of its weight.

SAPO MOLLIS

[Sap. Moll.]

Soft Soap

Soft soap is soap made by the interaction of potassium hydroxide, or sodium hydroxide, with a suitable vegetable oil or oils or with fatty acids derived therefrom; the use of coconut oil or palm kernel oil or of fatty acids derived from them is not admitted. It yields not less than 44 per cent. of fatty acids.

Characters. A yellowish-white to green, or brown, unctuous substance.

Soluble in *water*, and in *alcohol* (*90 per cent.*).

Tests for Purity. Boil 300 millilitres of *alcohol (95 per cent.)* to remove carbon dioxide, add 1·5 millilitres of *0·5 per cent. w/v solution of phenolphthalein,* allow to cool to 70°, and neutralise, if necessary, with *N/10 sodium hydroxide* or *N/10 sulphuric acid.*

To 100 millilitres of the neutral alcohol add 10 grammes of the soap and warm until dissolved. Add in a thin stream 5 millilitres of hot *solution of barium chloride* previously neutralised to *solution of phenolphthalein,* mix thoroughly, and titrate with *N/10 hydrochloric acid* until the pink colour disappears; not more than 1 millilitre is required (limit of alkali hydroxide).

If no free alkali hydroxide is found, to 100 millilitres of the neutral alcohol add 10 grammes of the soap and dissolve it as quickly as possible by heating. Cool to 70° and titrate at that temperature with *N/10 sodium hydroxide*; not more than 0·2 millilitre is required (limit of free fatty acid).

To the remainder of the neutral alcohol add 10 grammes of the soap and dissolve it as quickly as possible by heating. Add immediately 3 millilitres of *N/1 sulphuric acid* and boil on a water-bath for at least ten minutes. If the solution is not pink, cool to 70° and titrate with *N/1 sodium hydroxide* until a pink colour appears. If, after boiling with the acid, the pink colour returns, a further quantity of *N/1 sulphuric acid* must be added and the boiling repeated. The volume of *N/1 sulphuric acid* neutralised by the soap is not more than 1 millilitre (limit of total free alkali).

Dissolve 5 grammes in 80 millilitres of a mixture of 50 millilitres of *alcohol (95 per cent.)* and 100 millilitres of *water,* without heating more than is necessary; transfer to a separator, washing the vessel with the remaining 70 millilitres of the mixture. Extract with 100 millilitres of *ether* while still slightly warm, run off the alcoholic soap layer into a second separator and extract with 50 millilitres of *ether.* Repeat the extraction with 50 millilitres of *ether* and pour the three ethereal extracts into a separator containing 20 millilitres of *water.* Rotate the separator without violent shaking and, after allowing the liquids to separate, run off the water. Repeat the washing with *water* in the same way, until the separated water is not more than faintly turbid when acidified. Wash the ethereal solution twice by shaking vigorously with 20 millilitres of *N/2 potassium hydroxide,* each washing with alkali being immediately followed by washing with 20 millilitres of *water,* shaking vigorously each time. Acidify the last alkali washing after separating it and, if the liquid becomes turbid, repeat the washing with *N/2 potassium hydroxide* and *water* until the alkali washing remains clear on acidification. Finally wash with successive quantities of 20 millilitres of *water* until the water no longer gives a pink colour with *solution of phenolphthalein.* Transfer the ethereal solution to a weighed flask

BIRLA COLLEGE LIB PILANI

and remove the ether. When nearly all the ether is evaporated, add 3 millilitres of *acetone*. By the aid of a gentle current of air remove the solvent completely from the flask, which is preferably almost entirely immersed, held obliquely and rotated in a boiling water-bath. Repeat this operation until the weight of the residue is constant. The residue weighs not more than 0·04 gramme (limit of unsaponified neutral fat and unsaponifiable matter).

Dissolve 5 grammes in 100 millilitres of hot *alcohol* (*90 per cent.*), previously neutralised to *phenolphthalein*, filter through a dried and tared filter, wash the residue thoroughly with hot neutralised *alcohol* (*95 per cent.*), and dry at 100°; the weight of the residue is not more than 0·15 gramme (limit of chlorides and other alcohol-insoluble substances).

The fatty acids, obtained in the Assay, have the following characters:—*solidifying-point*, not higher than 31°; *acid value*, determined on 2 to 3 grammes of the fatty acids, using *N/2 aqueous potassium hydroxide* and multiplying the number of millilitres required by 5, not greater than 205; *iodine value* (*iodine monochloride method*), not less than 83.

Mix 0·5 millilitre of the melted fatty acids in a test-tube with 2 millilitres of *acetic anhydride*, warm, shake until clear, and cool to 15·5°. Transfer one drop of this solution to a white porcelain tile, place one drop of a cold mixture of equal volumes of *sulphuric acid* and *water* near to it, and gently bring the drops together with a glass rod; no transient violet colour is produced (absence of resin).

Assay. *For fatty acids.* Dissolve about 20 grammes, accurately weighed, in 100 millilitres of *water*, transfer to a separator, acidify with *dilute sulphuric acid*, and extract with three successive quantities of 70 millilitres of *ether*. Mix the ethereal solutions in a separator, and wash with *water*, until the washings are free from mineral acid. Transfer the ethereal solution to a weighed flask, remove the ether, dry the residue at 80°, and weigh.

STIBOPHENUM

[Stibophen.]

Stibophen

$C_{12}H_4O_{16}S_4SbNa_5,7H_2O$ . . Mol. Wt. 895·1

Stibophen is sodium-antimony-bispyrocatechol-3:5-sodium disulphonate $(NaO_3S)_2C_6H_2O_2:SbOC_6H_2(ONa)(SO_3Na)_2,7H_2O$. It may be obtained by the interaction of antimonious oxide, sodium pyrocatechol-3 : 5-disulphonate and sodium hydroxide. It contains not less than 15·6 per cent. and not more than 16·0 per cent. of trivalent antimony, and not less than 16·5 per cent. and not more than 16·9 per cent. of sulphur, both calculated with reference to the anhydrous substance.

Characters. Colourless, fine, somewhat glistening, crystalline powder; odourless.

Readily soluble in cold *water*; almost insoluble in *dehydrated alcohol*, in *ether*, in *chloroform*, in *acetone*, and in *light petroleum*.

A neutral solution in *water* is at first colourless, but soon acquires a yellowish tint, finally reaching a maximum lemon-yellow colour. If the colourless solution is made acid to *solution of litmus*, the formation of the yellow colour is prevented.

Tests for Identity. A 5 per cent. w/v solution in *water* is neutral to *solution of litmus* (*p*H about 6·5).

After decomposition by fusion with *potassium hydroxide* and *potassium nitrate*, yields the *reactions* characteristic of sodium, of antimony and of sulphates.

Dilute 0·1 millilitre of a 5 per cent. w/v solution in *water* with 3 millilitres of *water*, and add one drop of *solution of ferric chloride*; an intense bluish-green colour is produced which, on adding *solution of sodium bicarbonate*, drop by drop, changes through violet to cherry-red.

To 5 millilitres of a colourless 5 per cent. w/v solution in *water* add 0·5 millilitre of *solution of sodium hydroxide*; the liquid immediately acquires a lemon-yellow colour. Add *dilute sulphuric acid* in excess; the colour is discharged.

To 10 millilitres of a 1 per cent. w/v solution in *dilute acetic acid* add 2 millilitres of *N/10 iodine*; the colour of the iodine is discharged.

Tests for Purity. To 2 millilitres of a 5 per cent. w/v aqueous solution add 1 millilitre of *dilute solution of ammonia* and 0·2 millilitre of *solution of ammonium oxalate*; the liquid remains clear (limit of calcium).

To 1 millilitre of a 5 per cent. w/v solution in *water* add 2 millilitres of *water*, 1 millilitre of *dilute nitric acid* and 0·1 millilitre of *solution of silver nitrate*; no opalescence or precipitate is produced (absence of chloride).

To 1 millilitre of a 5 per cent. w/v solution in *water* add 2 millilitres of *water*, 0·5 millilitre of *dilute hydrochloric acid* and 0·2 millilitre of *solution of barium chloride*; the liquid remains clear (absence of sulphate).

Arsenic limit, 5 parts per million. *Lead limit*, 5 parts per million.

Loses, when dried at 140° to 150° in a vacuum, not less than 14 per cent. and not more than 16 per cent. of its weight.

Assay. *For trivalent antimony.* Dissolve 0·4 to 0·5 gramme, accurately weighed, in 10 millilitres of *dilute acetic acid* and 25 millilitres of *N/20 iodine.* After five minutes, titrate the excess of iodine with *N/20 sodium thiosulphate.* Each millilitre of *N/20 iodine* is equivalent to 0·003044 gramme of antimony.

For sulphur. Weigh accurately about 0·3 gramme, transfer to a nickel crucible, add 2 grammes of *potassium hydroxide* in powder, 0·5 gramme of *potassium nitrate,* and 1 millilitre of *water.* Heat the mixture, gently at first, over a small flame; gradually raise the temperature, stirring constantly, and finally heat strongly, until a clear quiescent melt is obtained. Allow to cool, dissolve in 100 millilitres of *water,* add 1 gramme of *tartaric acid,* allow to dissolve, make appreciably acid with *dilute hydrochloric acid,* heat to boiling, add 5 millilitres of boiling *solution of barium chloride,* and heat for half an hour on a water-bath; collect the precipitate, wash, ignite and weigh. 1 gramme of the precipitate is equivalent to 0·1374 gramme of sulphur.

Storage. Stibophen should be kept in a well-closed, neutral glass container, protected from light. It should not be brought into contact with iron, or its compounds.

DOSES

By intravenous injection.

Metric.	**Imperial.**
0·1 to 0·3 gramme.	**$1\frac{1}{2}$ to 5 grains.**

UNGUENTUM HYDRARGYRI

[Ung. Hydrarg.]

Ointment of Mercury

Synonym. Mercury Ointment.

A suitable quantity of white beeswax may be used, in place of an equal weight of Benzoinated Lard, in making this Ointment, in order to produce an Ointment of the required consistence.

UNGUENTUM HYDRARGYRI NITRATIS FORTE

[Ung. Hydrarg. Nit. Fort.]

Strong Ointment of Mercuric Nitrate

Synonyms. Unguentum Hydrargyri Nitratis: Mercuric Nitrate Ointment.

Arachis Oil may be used, in place of Olive Oil, in making this Ointment.

APPENDICES

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APPENDICES

APPENDIX I

MATERIALS AND SOLUTIONS EMPLOYED IN TESTS

Add the following reagents :—

Amylene Hydrate : of the British Pharmacopœia.

Butyl Alcohol : *n*-butyl alcohol, of Reagent purity.

Chloromethoxyacridone : 1-chloro-7-methoxyacridone, of Reagent purity.

Diazobenzenesulphonic Acid, Solution of : dissolve 0·9 gramme of *sulphanilic acid* and 10 millilitres of *hydrochloric acid* in sufficient *water* to produce 100 millilitres. To 3 millilitres of this solution add 3 millilitres of a 5 per cent. w/v solution of *sodium nitrite* in *water* ; cool in ice for five minutes ; add a further 12 millilitres of the solution of *sodium nitrite* and again cool in ice ; dilute with *water* to 100 millilitres and keep cooled in ice.

Solution of Diazobenzenesulphonic Acid must be freshly prepared and should not be used until at least fifteen minutes after preparation.

Mepacrine Thiocyanate : of Reagent purity.

Nitrobenzyl Chloride : *p*-nitrobenzyl chloride, of Reagent purity.

Phenylhydrazine Acetate, Solution of : dissolve 10 millilitres of *phenylhydrazine* and 5 millilitres of *glacial acetic acid* in a sufficient quantity of *water* to produce 100 millilitres.

Sodium Acetate : $C_2H_3O_2Na, 3H_2O$, of Reagent purity.

Vanillin, Solution of, in Sulphuric Acid : a 1 per cent. w/v solution of *vanillin* in *sulphuric acid*.

APPENDIX II

A. *SOLUTIONS EMPLOYED IN VOLUMETRIC DETERMINATIONS*

Add the following solutions :—

Solution of Hydrochloric Acid, N/200, N/1000

for N/200	0·1823 gramme HCl
for N/1000	0·03646 gramme HCl

Solution of Iodine, N/20

for N/20 .	6·345 grammes I and 9·00 grammes KI

B. *INDICATORS EMPLOYED IN VOLUMETRIC DETERMINATIONS AND IN pH DETERMINATIONS*

Add the following solution :—

Congo Red, Solution of : dissolve 0·1 gramme of *congo red* in 20 millilitres of *alcohol (90 per cent.)* and a sufficient quantity of *water* to produce 100 millilitres.

APPENDIX VI

QUANTITATIVE TEST FOR LEAD

REAGENTS AND SOLUTIONS

Add the following reagents :—

Nitric Acid PbT. *Nitric acid* which complies with the following additional test :—Dilute 10 millilitres with 10 millilitres of *water*, make alkaline with *solution of ammonia PbT.*, add 1 millilitre of *solution of potassium cyanide PbT.*, dilute to 50 millilitres with *water*, and add 2 drops of *solution of sodium sulphide PbT.*; no darkening is produced.

Sulphuric Acid PbT. *Sulphuric acid* which complies with the following additional test :—Dilute 5 grammes with 20 millilitres of *water*, make alkaline with *solution of ammonia PbT.*, add 1 millilitre of *solution of potassium cyanide PbT.*, dilute to 50 millilitres with *water*, and add 2 drops of *solution of sodium sulphide PbT.*; no darkening is produced.

Tartaric Acid PbT. *Tartaric acid* which complies with the following additional test :—Dissolve 10 grammes in 25 millilitres of *water*, make alkaline with *solution of ammonia PbT.*, add 1 millilitre of *solution of potassium cyanide PbT.*, dilute to 50 millilitres with *water*, and add two drops of *solution of sodium sulphide PbT.*; no darkening is produced.

In the Table, British Pharmacopœia, 1932, page 558, *insert*

Stibophenum . . .	1[h]	—[i]	—	—	0.5	5

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[h] Primary solution prepared as follows :—Heat 1 gramme with 10 millilitres of *nitric acid PbT.* and 5 millilitres of *sulphuric acid PbT.* in a round-bottomed flask ; after the first reaction has subsided continue to heat until white fumes are given off and the liquid is clear and almost colourless. Cool, add 1 gramme of *tartaric acid PbT.* and 15 millilitres of *water*. Cool, add *solution of sodium hydroxide PbT.* until alkaline and then add a further 10 millilitres. Cool, transfer to a 100-millilitre Nessler glass, add 1 millilitre of *solution of potassium cyanide PbT.* and *water* to the 100-millilitre mark.

[i] Auxiliary solution prepared by dissolving 1 gramme of *tartaric acid PbT.* in 50 millilitres of *water*, and 12·5 millilitres of *solution of sodium hydroxide PbT.*, adding 1 millilitre of *solution of potassium cyanide PbT.* and diluting to 100 millilitres with *water*.

APPENDIX VII

QUANTITATIVE TEST FOR ARSENIC

METHODS OF PREPARING THE SOLUTION TO BE EXAMINED

Add the following Methods :—

Iodoxylum. Limit **1** part per million.

Digest **10** grammes with 20 millilitres of *nitric acid As T.* and 10 millilitres of *sulphuric acid As T.* until iodine is no longer evolved and white fumes are given off; cool, dilute to about 50 millilitres with *water*, and again boil until white fumes are evolved ; cool and dilute to 50 millilitres with *water*.

Stibophenum. Limit **5** parts per million.

Treat 2 grammes as described under 'Antimonii et Potassii Tartras'.

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The Index is arranged according to the alphabetical order of the English names of the official drugs and preparations. The Latin names of the official drugs and preparations, with the exception of Synonyms, are not included in the Index, because the text of the Addendum, like that of the Pharmacopœia, is arranged according to the alphabetical order of the Latin names.

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